



Effects of Gamification in the Classroom

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RESEARCH QUESTION

- Will gamification in the classroom increase student achievement?

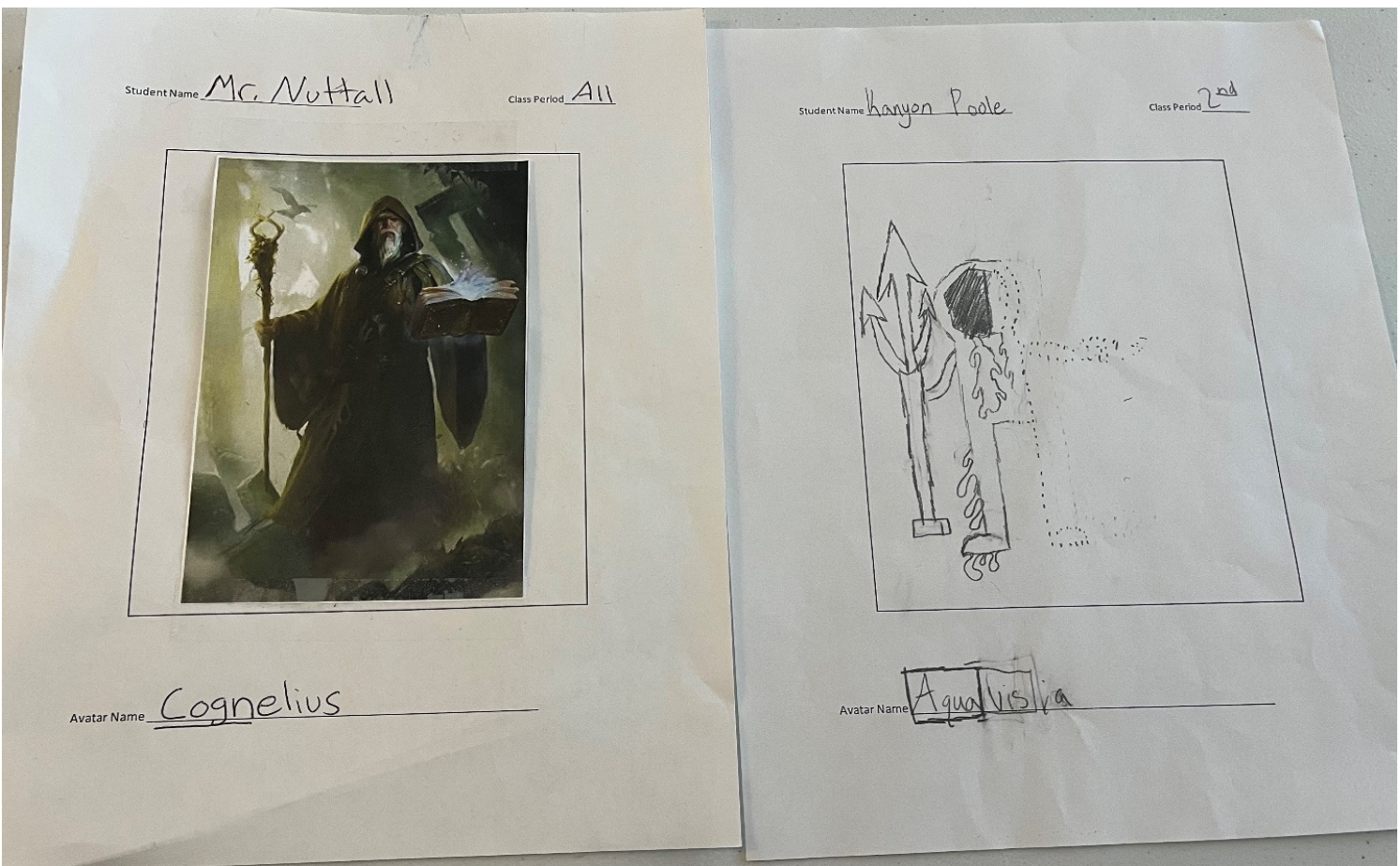
BACKGROUND

Engagement in the classroom can help determine student achievement. Gamification is a method of bringing greater student engagement by using popular video game mechanics in the classroom. I implemented gamification in my classroom using game mechanics such as leveling up, no consequences for losing, and character avatars. The implementation of these game mechanics are designed to give the students a sense of freedom and authority over their learning as well as remove high stakes testing.. When students feel more autonomous in their learning, they become more engaged and willing to try without the fear of failure.

SAMPLE

My classes included three groups of sixth graders at Farnsworth Middle school in the 22-23 school year.

- There were a total of 67 students between three classes
- There were seven students with educational plans.
- The class consisted of 37 girls and 30 boys.
- Students were ages 11-12



Teacher avatar and student avatar sample.

METHODOLOGY

Several changes were made to the class in order to add game elements, these changes include:

- Changing grades to level.
- Changing points to experience.
- Tests became bosses.
- Potion tokens were given, and rewards associated with turning in potion tokens were created.

Level	Level Title	Xp Needed	Rewards
1	Starving Neanderthal	20	1 potion token
2	Neanderthal	60	1 potion token
3	Observer	110	1 potion token
4	Tinkerer	170	1 potion tokens
5	Novice scientist	240	1 potion tokens
6	Astrologist	320	1 potion tokens
7	Laboratory technician	410	1 potion tokens
8	Alchemist	510	1 potion tokens
9	Scientist	630	1 potion tokens
10	Analyst	670	1 potion tokens
11	Research assistant	700	1 potion tokens
12	Researcher	730	1 potion tokens
13	Professor	770	1 potion tokens
14	Philosopher	800	1 potion tokens
15	Biologist	830	1 potion tokens
16	Physicist	870	1 potion tokens
17	Chemist	900	1 potion tokens

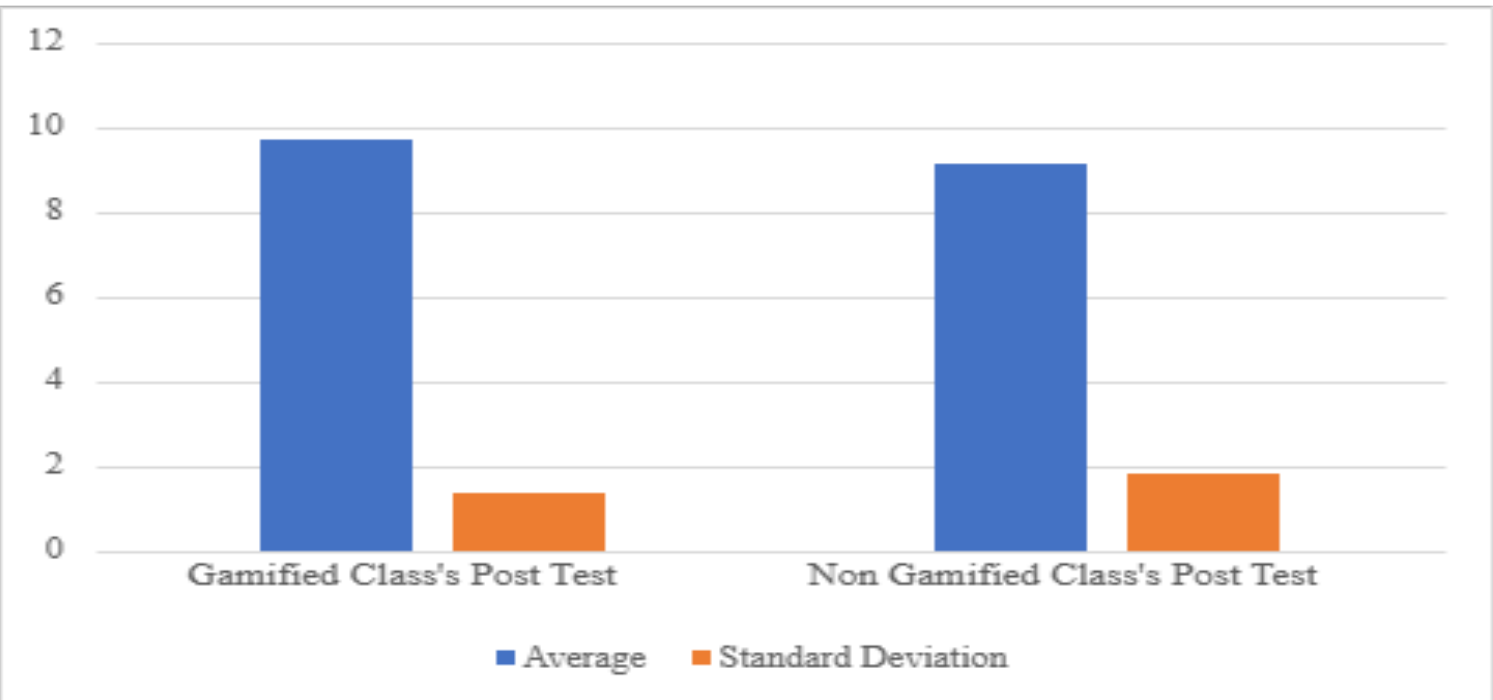
Level chart for experience gained

DATA AND ANALYSIS

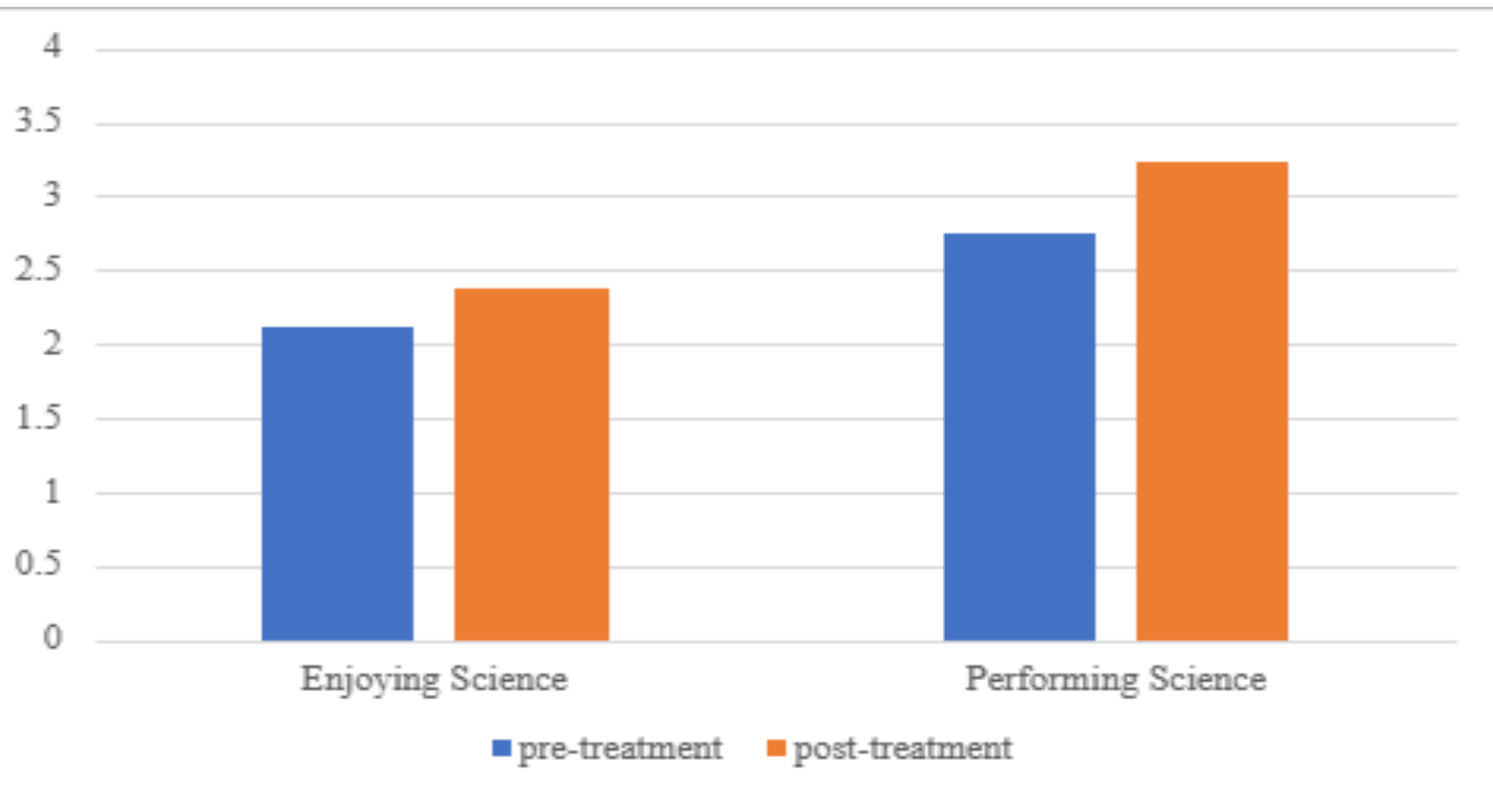
Results from the data collection include:

- An average increase of .24 points, in enjoyment of science on a 1-4 scale.
- An average increase of .49 in desire to perform science rather than be told on a 1-4 scale.
- No statistical difference on the Post Thermal Unit Test.
- Student Interviews showed students were excited about the concepts and would want to do it again.

POST TEST COMPARISON



SCIENCE ATTITUDE CHART



CONCLUSION

From this study three claims of its effects on the classroom were made.

- Claim one: gamification had no significant effect on academic achievement.
- Claim two: students did not show any increase or decrease in their enjoyment of science class or their attitude towards performing science.
- Claim three; students enjoyed the creativity and rewards provided by gamification in the classroom.

It was concluded that for gamification to be more effective it would need to be built upon.